All Terrain Vehicle (ATV) Safety For Agricultural Workers

SAFE FARMS

SPOT THE HAZARD
ASSESS THE RISK
FIND A SAFER WAY
EVERYDAY

Manitoba

Acknowledgements

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Introduction

This is an overview of the hazards associated with all terrain vehicles (ATV) and how to use them safely for agriculture.
It includes the current requirements of *The Workplace Safety and Health Act* and its accompanying Regulation, as they apply to ATV use in Manitoba agricultural operations.

This booklet is a guide and does not cover all details of safe ATV use. Because the application of this information and other factors may vary greatly, the province cannot assume any responsibility or liability for the use of this information. It is intended as a guide, only.

The key things to know about the proper use of an all terrain vehicle are:

- Make sure **anyone** using an ATV under your responsibility has been properly trained in basic ATV operation and safety.
- Do not allow passengers on an ATV.
- Always wear an ATV helmet.
- Do not use a three-wheeled ATV.
- Never drive on or across a highway, unless you have a permit.

If your operation is covered by the requirements of *The Workplace Safety and Health Act*, you are responsible for training workers and assessing each person's competence before authorizing a worker to operate an ATV.

Anyone who operates an ATV on your property or on your behalf (whether worker, family member, or guest), should be properly trained. An ATV is a vehicle that requires a strong combination of skill, good judgment, attention and physical strength. Someone who does not have this combination of qualities is at serious risk.

This booklet outlines why you should not allow passengers on the ATV. The driver needs to be able to move freely on the ATV seat to control it and a passenger interferes with that movement. A passenger raises the ATV center of gravity to a dangerous level. A passenger may affect the vehicle's center of gravity, by adding greater instability to the front or rear axle. A passenger will be in the way if the operator needs to get

off the ATV quickly in an emergency. While there are a few ATV models that are designed for a second person the majority are single-operator vehicles.

Solid research shows that in an ATV accident, a helmet may be the only thing between the operator and a disastrous head injury or death.

Three-wheeled ATVs are far more unsafe and unreliable than four-wheeled models. The accident and injury statistics are unmistakable. However, three-wheeled ATVs are still being used, especially by children and young people on family farms. If you still have a three-wheeled ATV, you are strongly urged to replace it with a safer, four-wheeled model.

Many of the most serious ATV accidents have been collisions with other vehicles. In a collision between an ATV and a car or truck, the ATV operator loses. Driving on or crossing a public road or highway is dangerous. If your work requires you to cross or drive along a roadway additional precautions are necessary.

This booklet will be useful to every agricultural operation in Manitoba that uses, or is considering using, an all terrain vehicle (ATV).

Most workplaces in Manitoba fall under the jurisdiction of the *Workplace Safety and Health Act* and its Regulation and must comply with vehicle registration and highway traffic legislation. This booklet will help you comply with these laws and protect the health and safety of anyone who drives an ATV.

What is an ATV?

ATV stands for all-terrain vehicle. An ATV is a small, specialized piece of mobile equipment that is designed for use on rough, unpaved ground. The operator sits on a saddle-like seat, and steers with handlebars (unlike most other small vehicles, which have chair or bench-type seats, and are controlled with a steering wheel). The ATV has four large balloon-like tires, with very low air pressure.

Most important, the ATV is designed to be "driver-active." On a "driver-active" vehicle like an ATV (or a motorcycle or snowmobile), the operator's body movements helps control the ATV's stability. Driver-active vehicles require a strong combination of skill, good judgment, attention, and physical strength.

The information in this booklet applies to four-wheeled or quad-type all-terrain vehicles. The first ATVs sold in North America were tricycle-type vehicles, with one wheel in front and two in the back. Since the 1980s, three-wheeled ATVs have not been manufactured or sold in North America, because their instability made them prone to serious rollover accidents. Many organizations across North America including the Canadian and American orthopedic surgeons' associations, have adopted strongly-worded resolutions supporting the ban on three-wheeled ATVs.

Use of ATVs in Agricultural Operations

We see ATVs being used on farms, ranches, and other agricultural workplaces to:

- herd livestock
- check fences and irrigation lines
- haul fuel, chemicals, salt, feed or other supplies
- move small injured or ill animals
- apply chemicals
- plowing snow
- mowing grass and cutting brush.

In many situations, the ATV driver is working in a remote area of the property and is often working alone.

People who operate ATVs in agriculture include:

- farm owners
- members of the farm owners' family (who may be children or the elderly)
- hired workers on the farm operation.

ATVs are often used on family farms, for work and recreation.

Children and ATVs in Agriculture

General conditions for ATV use are:

- Children under 12 should not use ATVs at all (some organizations even feel the age should be 14).
- Children between 12 and 16 should only use smaller ATVs with a motor no larger than 90 cubic centimetres, and should always drive under adult supervision.

Safe operation of an ATV requires skill, good judgment, attention and physical strength. A child or young person is developing these qualities, but may not yet be able to drive an ATV without close supervision, or even to drive an ATV at all. Children mature physically and mentally at different rates. What's suitable for one 13 year old may be far beyond the strength or ability of another. Parents should use caution when allowing children to drive ATVs.

A Manitoba study showed the high risks for children who use ATVs. The survey used interviews and questionnaires at agricultural fairs and similar events. The *Injuries Manitoba – Prevention of Adolescent and Childhood Trauma* (IM-PACT) study surveyed over 300 Grade 6 students in the 1996/97 school year.

The survey showed:

- 42 per cent of the children said they had ridden ATVs on public roads
- 26 per cent of the children who owned ATVs said their ATVs were three-wheeled models
- more than 50 per cent of the children said they were driving adult-sized ATVs
- only 30 per cent of the children said they always wear a helmet while riding ATVs

We can assume that similar results would be found among most children and young people in farm families today.

In a policy reaffirmed in January 2000, the Canadian Pediatric Society (the organization of doctors who treat children), recognized all ATV models as hazards to the health of Canadian children. Based on their experience of treating children injured in ATV accidents, they called for:

- a ban on ATV use by children under 14 years, since the safe use of off-road vehicles requires skill, judgment and experience
- compulsory licensing of all ATV operators
- a ban on passengers on ATVs
- compulsory use of helmets during ATV use

The North American Guidelines for Children's Agricultural Tasks

The Canadian Agricultural Safety Association has recommended that farm parents follow the *North American Guidelines for Children's Agricultural Tasks* (NAGCAT) when giving farm chores to children and young people.

The NAGCAT guidelines on ATV safety for children ask the following questions:

1. Can the child reach and operate all controls while comfortably seated?
2. Is the child strong enough to operate the controls without straining?
3. Does the child have good peripheral vision? For example, while looking straight ahead, can the child see your finger entering his or her field of vision at shoulder level?
4. Can the child use hands and feet at the same time? For example, can the child run and dribble a basketball?
5. Can the child understand and repeat from memory a five-step process?
6. Can the child recognize a hazard and solve the problem without getting upset?
7. Can the child react quickly?

8. Does the child do things that seem dangerous for the thrill of it?
9. Is your child responsible? Do you trust your child to do what's expected without anyone checking?
10. Does the child usually go with his or her "gut" feeling without thinking too much about what could happen next?
11. Has an adult demonstrated farmwork with an ATV on site?
12. Has the child shown that he or she can do the job safely four to five times under close supervision?
13. Is an adult available to supervise?

Even if your child is old enough, you may decide, based on these questions, that she or he is not yet ready to safely drive an ATV.

Adequate supervision of children and young people should follow these steps:

- Explain the task, and draw attention to each hazard and possible problem.
- Discuss solutions for each hazard and problem.
- Demonstrate the task while describing each step.
- Have the child or young person do the task four or five times under direct and continuous supervision.
- Have the child or young person do the task, but the adult should come back to observe or check every 15 to 30 minutes.

What's Required?

Currently in Manitoba, there are two distinct areas of requirements that apply to ATV use. One area involves licensing, and where the ATV can be operated (*The Highway Traffic Act and Off-Road Vehicles Act*). The other area involves the use of the ATV as **work**-related equipment (the requirements of *The Workplace Safety and Health Act* and Regulation).

Motor Vehicle and Traffic Law Requirements

In Manitoba, no person under the age of 14 years is permitted to operate an off road vehicle, including an ATV, unless supervised at all times by a parent or another adult authorized by the parent. ATVs must be registered and insured for use unless they are operated solely on land that is owned or leased by the owner.

A helmet is required if using an ATV. Passengers are not permitted on an ATV unless the ATV is designed with a seat to carry a passenger.

Generally speaking, ATVs may not be operated on roadways in Manitoba. However, operation on and across roadways is permitted under the following circumstances:

1) ATVs may operate on the shoulder of a highway *if*:

- the ATV is being used for agricultural purposes
- the ATV displays a slow moving vehicle sign visible from the rear
- the operator is at least 16 years old and holds a minimum Class 5 Intermediate stage licence
- the ATV travels on the same side and in the same direction as vehicular traffic and does not exceed 40 kilometres per hours

2) ATVs may cross a highway *if*:

- it is within five meters of an intersection, at a designated location for off road vehicle crossings, or at any other place along the highway if the nearest intersection is more than three kilometers away

- the operator holds a minimum Class 5 Intermediate stage licence
- the operator crosses the roadway in the most straightforward manner (ex: at a 90 degree angle to the roadway)

3) ATVs may be operated on designated roadways *if*:

- the operation is specifically authorized in municipal bylaw
- the ATV is operated as close as possible to the right edge/ curb of the roadway
- the ATV is driven in single file with other ATVs
- the operator is at least 16 years old and holds a minimum Class 5 Intermediate stage licence

Workplace Safety and Health Requirements

Since June 1977, agricultural workplaces have come under the jurisdiction of *The Workplace Safety and Health Act* and Regulation.

In addition to the general responsibilities to provide training, remedy hazards, and maintain equipment in good working order, specific sections of the Workplace Safety and Health Regulation apply to ATV use in the workplace. Requirements, including operator training and competency, work procedures, personal protective equipment and appropriate equipment maintenance, are covered in the Regulation.

The requirements for worker training and competency include:

- Any operator of powered mobile equipment must be adequately trained, familiar with the equipment and have demonstrated competency to a qualified supervisor or instructor.
- Anyone operating powered mobile equipment must also be authorized by the employer to do so.
- A supervisor must not operate or knowingly allow a worker to operate unsafe powered mobile equipment.

Training of an ATV operator must cover:

- pre-trip inspection procedures
- use of personal protective gear and clothing
- operating skills according to the manufacturer's instructions

- basic mechanical requirements
- loading and unloading procedures if needed

Anyone operating an ATV in a workplace must be wearing:

- a helmet certified for use with ATVs or motorcycles
- eye protection (a helmet visor or goggles)
- hearing protection
- suitable clothing for the conditions, particularly long sleeves and pants

The required safe work procedures should include (but not be limited to):

- Before use, the operator must inspect the ATV and report any defects or hazards to the employer right away.
- Any operator of powered mobile equipment must operate it safely, meeting all requirements, including those in the operator's manual.
- Service, maintenance and repair must not be done when equipment is operating (unless unavoidable and then only under safe conditions).
- The operator may not carry anyone else on the ATV unless the ATV has a seat for passengers.
- A copy of the operator's manual must be on the ATV or readily available to the operator for reference.
- If the ATV is left unattended, the operator must secure it by setting the brake, putting the transmission into park if possible, and using wheel chocks if there is a possibility of rolling.
- If ATVs are used around pedestrians in the workplace, designated walkways (or if necessary, other procedures) must separate pedestrians from moving ATVs.
- If an ATV is carried on a vehicle, loading and unloading must be done safely, using appropriately placed ramps with a non slip surfaces.

The ATV must also meet some basic conditions:

- All powered mobile equipment must be safe for the conditions. If defects are discovered, ATVs must be taken out of service until defects are repaired.
- Maintenance records for powered mobile equipment must be maintained by the employer (owner) in the workplace and available for review, should a Safety and Health Officer enquire.
- ATVs that will be operated at dusk or at night, or in other low visibility, must have headlights and a lighted instrument panel.
- All exposed moving parts on an ATV must have proper guards.
- No significant modifications can be made to an ATV without certification by a professional engineer.

The full text of these requirements, along with supporting guidelines and policies, is available online on the Workplace Safety and Health Division website at: **manitoba.ca/labour/safety**.

How to Choose an ATV

Depending upon manufacturers and models the features of ATVs can be very different. When using any new or unfamiliar ATV, check the manufacturers' manual to prepare yourself for the different features.

This section is not intended to be a buyers' guide to ATV manufacturers and models. However, by considering the following list of pointers, you may get a clearer idea of the types of ATV available on the market. If you are planning to buy an ATV, this list should help you make a good choice.

At the same time that you buy the ATV, be sure to include a suitable helmet, if you do not already have one in good condition.

ATVs can be designed for serious work or for recreation – be sure to choose the model, which will be most suited to your needs.

- Does it have a two or a four-stroke engine? Utility models almost always have four-stroke engines.
- Does it have two or four-wheel drive? Utility models almost always have four-wheel drive.
- Does it have a rear differential that can be locked and unlocked? Differentials on utility models can be locked.
- Does it have an independent suspension system?
- Is it designed for work in the bush, with brush shields?
- Is the transmission standard, automatic, or semi-automatic? Utility models need reverse gear and automatic clutch.
- Is the starter electric (battery) or recoil (pull-start)?
- Does it have options or special attachments, like a trailer hitch or a winch?

Consider who will be using the ATV and buy the appropriate size:

- Can the operator comfortably push the foot brakes?
- Can the operator comfortably stand, with enough clearance from the seat? On rough ground, a half-standing position is needed for the operator to absorb shocks and avoid getting thrown.

- Are the handlebars positioned so arms are slightly angled?
- Can the operator comfortably grip the handlebar controls?
- Are the footplates solid, non-slip and comfortably positioned? Do they have a raised ridge to prevent the foot from slipping off?
- Is there space for the operator's knees without banging against the handlebars or brush shields?
- Can the operator swing a leg high over the seat, to get on and off? There are models with a cutaway space in front of the seat.

If you think someone may be tempted to carry a passenger on your ATV, you should consider a different type of equipment. Some manufacturers are now making four-wheeled and six-wheeled vehicles that can safely carry one or more passengers and a larger load of gear or farm materials. Some of these vehicles are equipped with roll bars or rollover protective structures (ROPS). At the end of this booklet, you will find a brief discussion on the advantages and disadvantages of this type of vehicle.

If there is any possibility that children will use the ATV, it must be a smaller model with a 90cc motor. Make sure the child has a helmet that fits.

Special Features of the ATV

Make sure you are aware of these hazards and that you explain them clearly to anyone you allow to drive the ATV. Some ATVs have special feature that can cause serious safety hazards. Special features include:

- large low-pressure tires
- high center of gravity
- fixed rear axle
- limited protection for the operator.

The Tires

ATVs have big balloon tires designed for rough terrain. The tires make the vehicle difficult to steer on pavement or hard surfaces and it is illegal to drive an ATV on a highway. The tires create more bounce than other vehicles, which adds to the instability.

The tires use very low air pressure usually between two and six pounds per square inch (psi). Check the manufacturer's guide for exact pressure. With such low pressure, a regular tire gauge may not be accurate enough. Use a smaller-scale gauge with ATV tires.

Even a difference of one pound will make a difference. The tire pressure must be the same on all four tires or the ATV will pull towards the soft tire. Always check the tire pressure before each ride and top up the air if it's low.

Center of Gravity

The **center of gravity on a vehicle** is the point where all parts of it balance each other in all directions. All vehicles have an imaginary boundary at ground level, usually a square or a triangle, called the **stability baseline**. If the center of gravity moves outside the boundary of the stability baseline, the vehicle will tip or roll over.

ATV models vary, but the center of gravity of a parked ATV can be estimated:

- about six or more inches above the center of the axle
- about six or more inches behind the halfway point between the two axles

The stability baseline can be estimated by imagining the point where each wheel touches the ground and drawing a line through each of those four points, to form a square.

The center of gravity of the ATV itself stays the same. But if you add other weights to the ATV (the body weight of an operator, and heavy gear on the carrier racks), the center of gravity **includes** those weights, too. The new center of gravity is **higher**, and it may also be further forward or back, or off to one side.

The typical utility model ATV weighs about 600 pounds by itself, so the additional 200 pounds of an operator and gear can significantly raise the center of gravity. Lightweight recreational ATV models with a high ground clearance will have an even higher center of gravity.

Note that, when the ATV is fully loaded, travelling across a slope, the center of gravity is dangerously close to the stability baseline. In this situation, running over a bump on the upper side of the slope may be enough to tip the ATV over.

When the fully loaded ATV makes a sharp turn the four points of the wheels no longer form a square when they contact the ground. They become more like a triangle. If the ATV is loaded with gear over the front axle, the center of gravity is higher and further forward. When the front wheels, the stability baseline at the vehicle's front end is so narrow the center of gravity can easily move outside the boundary of the stability baseline. The result will be a rollover.

When teaching others to drive an ATV, make sure to emphasize this danger and how carrying a passenger is dangerous.

Rear Axle

Most ATVs have a fixed or solid rear axle. This means the two back wheels do not turn at a different rate when going around a curve, like they do on other vehicles.

When an ATV comes to a curve, you steer the handlebars and the front wheels turn in the direction of the curve. But both back wheels keep

going straight. When you turn, the force is pulling the ATV **out** of the curve. The whole ATV tries to skid outwards, or roll over, away from the curve. This is more noticeable at higher speeds.

The safe operation of the ATV depends on your body movement. To overcome the outward roll of the ATV, you must shift your upper body **into** the direction of the curve. This brings the center of gravity back inside the stability baseline.

To overcome the straight-ahead movement of the rear wheels, you must force the inner rear wheel to slip a little more than the outer rear wheel. You do this by bracing your outer foot hard on the footpeg as your upper body leans inward.

Note that these movements are affected by the distribution of the load on the ATV. An unevenly distributed load makes the ATV much more difficult to control.

The operator's movements are another reason not to carry passengers unless the ATV is specially designed to do so. The long seat on an ATV is intended to allow the operator to move freely, and control the vehicle. Carrying a passenger interferes with the driver's movements.

Limited Operator Protection

Most workplace vehicles have some kind of built-in protection for the operator (ex: reinforced cab of a truck, rollover protective structure (ROPS) of a tractor) ATVs have no ROPS and very little shielding.

Safety depends on a combination of preventive measures -- good operating skills, well-maintained equipment, protective gear and clothing.

Even a simple upset on rough ground can cause cuts, punctures and broken bones. A rollover, could pin the operator under the machine. In any kind of ATV accident, there will not be time to protect your head which is why helmets are essential.

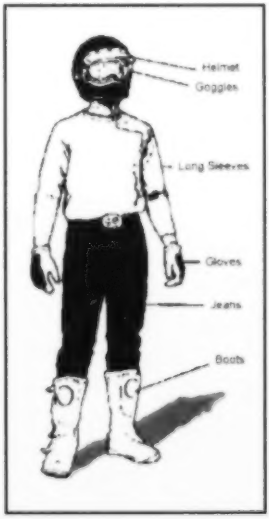
Wearing a helmet can prevent a fatal head injury or serious brain injury.

Protective Gear

ATV owners should wear the **best** protective gear possible for driving an ATV and set an example for anyone else who drives it.

When using an ATV in a workplace, the operator should wear:

- the right headgear and eye protection
- suitable clothing for the environment
- gloves, long pants and long sleeves



Even though the moving parts of an ATV are covered, a loose bootlace or piece of clothing can be entangled and cause a severe injury. They can get drawn into a spinning ATV axle with enough force to break a leg or foot. Loose clothing can also get caught in passing brush, pulling an operator off the seat.

Helmets

Helmets are legally required when driving ATVs. The correct helmet can make a difference between life or death -- or between a concussion and permanent brain injury.

Helmets must be certified for ATV use -- bicycle helmets, hockey helmets and industrial hard hats are not a legal substitute. An ATV helmet will stay on your head through anything. It has a chin strap and a visor or goggles. It will protect your face and eyes from loose gravel, dust, bugs and branches.

ATV helmets must have a certification sticker from one of the following agencies:

- Snell Memorial Foundation, for motorcycle use
- Canadian Standards Association (CAN3-D230-M85), for motor vehicle use

- British Safety Institution (BS5361), for vehicle users
- US DOT (571.218), for motorcycle use

The helmet should be in good condition, with no cracks or gouges in the plastic. The inner foam padding should be in good shape, and the chinstrap must work. The visor or goggles should be clear.

If the ATV operator has a small build, the helmet must be fitted for the smaller head size.

If the helmet goes through an accident:

- Get a new one. There's no way to tell if a damaged helmet can protect the driver a second time, even if it looks useable.

Clothing

Suitable clothing can protect you from minor injuries and make safe operation easier. Leather gloves will protect your hands from cold and injury. Since many ATV controls are handled with your thumb and fingers, gloves make it easier to drive safely.

Boots

Because your feet are also needed to control the ATV, (shifting your body when turning, half-standing over bumps) proper boots are needed. The soles of your boots should be non-slip, and high, sturdy boots will protect you from brush and flying gravel.

Regular Inspection

ATVs take a lot of wear and tear and need frequent, regular maintenance, to identify and correct small problems. It is important to check the vehicle before and after you ride it.

Make sure you have a clear system to report and correct any ATV mechanical defects or safety problems, even if you only have a small operation. Provincial workplace safety and health regulations state that anyone who sees an unsafe condition or act must report it to a supervisor or the employer. The person who receives the report must investigate the situation and correct any hazard without delay.

A good way of doing this with your ATV is by removing the key and using a tag system. The key must be secured so that no one can get the key and start the ATV until the unsafe situation is corrected. The tag should identify either:

- that the ATV has a serious safety problem and cannot be operated at all until the problem has been fixed
- that the ATV has a safety problem, and that it can be used only in certain circumstances

For example, if the ATVs brakes aren't working, the tag should say clearly that no one may use the ATV at all, until the brakes have been fixed. If the ATVs headlights aren't working, the tag should say that the ATV may be operated only on private land during daylight hours, until the lights have been fixed.

Each ATV in the workplace should have a maintenance record or a logbook. Each time the ATV is inspected and each time it is repaired or has problems, they should be noted. These records may be needed if you ever have to show evidence of regular maintenance and care.

Pre-Ride Inspection

The pre-ride inspection takes place in two parts – before you turn it on, and when it's running. Make sure to check everything covered in the owner's manual.

With the ATV turned off, check:

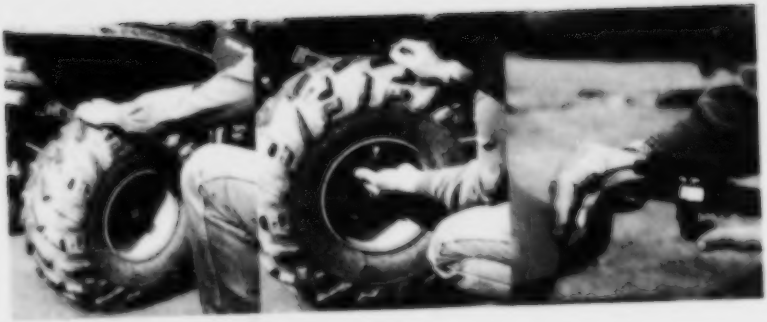
- ❑ the maintenance records to see if any recent problems or warnings are noted
- ❑ gas tank level
- ❑ oil level
- ❑ tire pressure on all four wheels and make sure there are no worn or cut patches
- ❑ tire stability by pulling on each one to see if there's movement
- ❑ helmet in good condition (chinstrap, visor)
- ❑ the first aid, emergency and tire repair kits are there, complete and in good order
- ❑ footpegs and footplates for stability by pulling on them to see if there's movement
- ❑ the wheel bolts on each rim
- ❑ all the cables and lines for signs of wear or breaks

With the ATV turned on check for:

- ❑ that the lights come on
- ❑ that the handlebars turn all the way and that moving them does not affect the throttle
- ❑ that the brakes work smoothly when you move forward slowly and that they don't pull to one side
- ❑ that the engine stops immediately and smoothly when you turn off the ignition

Make sure you walk around the vehicle before you start up to see if anything is dragging or entangled in the wheels or axles.

Make your inspection entry in the logbook; initial and date it. Note any problems and what needs to be done.



Post-Ride Inspection

Post-ride inspections are an excellent way to double check for problems and save time when you're ready to use the ATV again.

The post-ride inspection has many of the points as the pre-ride inspection.

Before you put the ATV away, check:

- ❑ all fluid levels and top them up
- ❑ the pressure and condition of all four tires and add air if necessary
- ❑ the tightness of all important parts
- ❑ all lines and cables for signs of wear or damage

Before putting it away, clean the ATV thoroughly. Grit and standing water will corrode and damage important parts.

Inspect the helmet for any signs of wear or damage, and replace it if you have any question about its effectiveness. Replace anything that was used in the first aid, emergency and tire repair kits.

Preventive Maintenance

While many farm operations do their own vehicle maintenance, it's **not** a good idea to do it on ATVs. It it's under warranty, take it to the dealer for modifications, or you may lose the warranty. If you want modifications (extra gear racks, higher clearance, a trailer hitch) or something else – get the modifications done by the authorized dealer. If someone on your operation modifies the ATV, it may then become your liability.

Emergency Maintenance

ATVs don't come with spare tires, so always carry a repair kit to use if the tire goes flat. The kit should include a pump or a canister of compressed air, plugs and directions for how to use them.

Check the owner's manual for the emergency starting procedure. ATVs with battery starters usually have an emergency recoil starter. On a few ATV models, the gear shift depends on battery power, so the manufacturer makes an insertable bypass for manual shifting. Make sure this part and instructions for using it are kept with the ATV at all times.

Working Alone

One of the provincial workplace safety and health regulations for agricultural workplaces states that when people are working alone on farm property, the employer must have a way of periodically checking on them.

Two-way radios or cellphones are a good first step. However, if someone rolled the ATV and could not call for help **how long would it be** before someone started looking for the person?

Your farm's health and safety plan should already include the process to check on people working alone. Always make sure that someone else understands where you have gone, what route you are taking and when you plan to return. Arrange to have a reliable person call you regularly. If you do not answer the call, help can be sent immediately.

Equip ATVs with a first aid kit (see the back of the booklet for details) and other emergency equipment (flares, a space blanket, matches, basic tools and spare parts).

Emergency Evacuation

Emergency evacuation should also be included in your health and safety plan. Usually, an ATV is used **because** of difficult terrain where ambulances, etc. may not be able to go. The emergency response agency in your local area (fire department, emergency services, or a police detachment) can help you make an emergency evacuation plan in case of a serious injury.

Operating ATVs

The best way to learn to operate an ATV is by **doing** it and it's a good idea to look for courses offered on basic ATV operation. However, there are some common safety points.

Starting Up

Follow the starting directions in the owner's manual. Make sure the ATV is in neutral or park before starting with the parking brake on.

On Normal Rough Terrain

Walk a new or tricky route first, asking yourself:

- How stable is the ground?
- How loose are the rocks?
- How deep are the holes?
- Are there low-hanging branches?
- Is there space to safely turn around?

Experienced ATV operators **always look ahead** when driving. It's important to plan for the terrain **before** you get to it, rather than reacting at the last minute.

Don't go faster than you can see to stop. There may be other vehicles around and the ATV operator will come out the worst in a collision with another vehicle or piece of equipment. There may be branches or a tree down, or an animal on the road. Low-hanging branches are a special hazard. A helmet may save you from a brain injury, but if you're going too fast, a collision with a branch may throw you from the ATV completely. If you're driving ATVs in a group, keep a safe distance from each other.

Don't drag your feet on or even near the ground while the ATV is moving. Never get on or off a rolling ATV.

Never ride an ATV while reversing down a slope – either the ground, or a loading ramp. It's too easy to lose control, and with the ATV rolling backward, you will not have the chance to get off.

Don't suddenly throttle up (give it gas) or gun the motor, because it could start a back flip.

Through Water

Always check the owner's manual before driving an ATV through water, because the depth limit will vary. When you are first walking the ATV route, carry a stick to check for hidden holes, or a soft muddy bottom. Drive through the water at a steady speed, but do not raise a big spray.

Once out of the water, don't count on the brakes until you've checked them.

Never try to drive an ATV through fast-moving or unfamiliar water.

Reversing

Almost all ATVs have a reverse gear but no mirrors or backup beepers. If you do need to back the ATV up, always watch closely behind you.

Going Uphill

When driving up a slope, remember that the center of gravity will want to pull towards a back flip. To counteract this, make adjustments before you start going uphill. Redistribute the load so more weight is on the front of the ATV. Then, slide forward on the seat and lean forward and down.

Gear down and then slow down. Always climb a hill in **low** gear.

Don't make changes in the traction between the wheels and the ground by suddenly turning the front wheels, popping the clutch, or gunning the throttle. When an ATV is going uphill, a sudden burst of power will rotate the rear tires faster than the vehicle's weight can be pushed

forward. The ATV will pivot on the back axle and flip over, pinning the operator underneath.

Some ATV ads make it look like these vehicles can climb almost straight up a steep slope. These ads use only ideal conditions, with extreme camera angles, and highly skilled stunt riders. Don't overestimate the capacity of your ATV or your own skill and experience.

If the slope is too steep, an ATV will begin to stall, roll or slide backward. If you panic and slam on the brakes, the back axle may lock and the ATV can pivot on the back axle and flip over.

If you discover a slope is too steep:

- First, apply the front and then the rear brakes, with the ATV pointed uphill.
- If it keeps sliding, **get off** and step away. You won't be able to stop a 600-pound ATV by force, anyway.
- If the front and rear brakes are holding, carefully get off the ATV, while continuing to apply the brakes.
- Stand with your feet clear, and set the parking brake, put the ATV in neutral, and turn the engine off.
- **Then**, with the immediate situation taken care of, you can decide what to do next: get help, use a winch, or try to walk it down.

Going Downhill

When driving an ATV down a slope, the center of gravity will want to pull towards flipping forward. To counteract this, make adjustments before you start going downhill:

- Redistribute the load so more weight is on the back of the ATV.
- Slide back on the seat and try not to lean forward.
- Gear down and then slow down. Do not use neutral. Let the engine keep you moving slowly.

If you must use the brakes, use the rear brakes. And brake gently, not suddenly. Don't ride the brakes. When an ATV is speeding downhill and the front brakes are suddenly applied, the front axle locks too quickly to stop pivots on the front axle. It flips forward and the operator is either thrown forward or pinned underneath the ATV.

Even a sudden, sharp application of the rear brakes can cause an upset, if the rear wheels lock. If the rear wheels lock too quickly, the back end of the vehicle will drag sideways and the ATV may roll.

Going Sideways across a Slope

Avoid going across a slope, whenever you can, because ATVs are **very** unstable in this situation. Never cross a slope that has a loose surface or big bumps.

Even on a gentle angle, the center of gravity will pull towards the downhill side of the slope. It's important to stop and redistribute the load to the uphill side of the ATV. Keep your body weight shifted to the uphill side, too.

Stay on the inside of the road or trail, because the outer edge of the trail may be loose or crumbling. Avoid bumps and holes and go slowly. Tipping one side of the ATV by running over a bump can be enough to cause a rollover.

If you're on a slope, and you feel the ATV starting to roll over:

- try to turn the wheels more to the downhill, if possible
- if you **can't**, carefully get off the ATV on the uphill side. The ATV may then level itself out without your body weight adding to the high center of gravity. Once off the ATV, you'll be able to think through what to do next.

Driving through Curves

On an ATV, you cannot take a curve at the same speed as driving in a straight line. Slow down **before** the curve. If you apply the brakes when you're in a curve, the wheels will tend to skid.

Steer the handlebars into the curve. Firmly brace the foot on the outside of the curve and lean **into** it. This will counteract the force pulling the ATV outward.

If you're already turning and feel the ATV start to roll outwards:

- lean your body further **into** the turn, away from the direction that the ATV is tipping
- reduce the throttle gradually
- straighten the wheels gradually, to widen the turn

Parking

Always park on level ground, if at all possible. If there is no level ground, park crossways to the slope. Always use the parking brake. If you're on a slope, use wheel chocks, if necessary.

Carrying Loads on an ATV

ATVs are mainly designed for transporting the operator rather than hauling large amounts of gear. There are limits on the weight you can safely haul with an ATV. Check the owner's manual for the exact limits because they vary by model. The manufacturer's recommended hauling limit is important, but the ATV will be harder to handle and stop with **any** heavy load.

Almost all ATVs have carrier racks, on the front and back of the vehicle. Don't try to carry gear on anything but the manufacturer's carriers.

An extra load on the front makes steering harder. It reduces traction on the rear wheels, so it's easier to skid the rear end and lose control. A heavy front load also changes the side-to-side stability of the ATV. You have to go slower, to compensate.

A heavy load on the back of the ATV increases the risk of a back flip. It, too, changes the side-to-side stability of the ATV.

Put any load as near the center of the ATV as possible and don't let any weight extend over the edges of the carrier racks. Use tie-downs, to keep the load from shifting while you're driving. Distribute the load

evenly, front and back, and on both sides. Use ballast, if necessary, to make sure the load is balanced.

Remember that a high or bulky load on the rear carrier will get in the way as you swing your leg over the seat when getting on or off the ATV.

Big containers of liquids can slosh a lot of weight back and forth, high up on the ATV. They make an ATV **very** unstable. If you regularly carry big containers of liquids, get a proper carrying tank, mounted low on an ATV trailer. A proper tank has baffles inside, to reduce the movement of the liquid.

Towing with an ATV

The owner's manual will have specific information about towing a trailer with your ATV. Never try to tow another vehicle or a trailer by attaching a rope or cable to the carrier rack. This will bring the center of gravity very high, near the rear stability baseline. It can cause the ATV to flip backwards. **Only** attach a trailer to the trailer hitch.

Using Ramps to Load and Unload an ATV

An ATV can be moved from place to place on a trailer or in the box of a full-sized pickup truck. This increases the flexibility of your ATV, allowing you to move it to places that are accessible only by public roads and highways, where you cannot drive the ATV itself.

The ramps must have a non-slip surface and must be securely attached to the truck or trailer. They should be sturdy enough to support the weight of the ATV and rider and wide enough for the ATV's tires.

When loading an ATV onto a trailer or truck, position the ramps for the ATV's tires and secure the ramps with hooks and safety straps. Centre

the ATV at the ramps and drive slowly up the ramps. Apply the parking brake and wheel chocks. **Always** secure the ATV by tying it down, before driving off.

When unloading an ATV from a trailer or truck, position the ramps for the ATV's tires and secure the ramps with hooks and safety straps. Never ride the ATV backwards down the ramps. If a wheel starts to go off the ramp, you will not be able to jump off the ATV as it tips over. From a standing position, with your hands on the handlebar controls, roll the ATV backwards to the beginning of the slope of the ramps. Step down onto the ground alongside the ramp, and with your hands on the handlebar controls, continue to roll the ATV down along the ramps to the ground.

Other Types of Small Utility Vehicles

ATVs are not always suitable for farm work. You may want to consider other types of small utility vehicles if:

- You frequently need to haul bulky or heavy loads.
- You frequently need to haul unstable loads, such as large containers of liquid, or live animals.
- You want to carry passengers.
- Some people on your operation may not have necessary combination of skill, judgment, attention and physical strength to drive an ATV.

Some of the new small utility vehicles are almost as versatile as an ATV. These vehicles do not demand the same level of skill and physical strength and have different handling characteristics.

In general, these vehicles have a wider and more stable wheelbase. They have large, rear cargo areas designed for heavy and bulky loads. They more closely resemble a car, with a steering wheel, pedals, gearshift, and front dash panel and have separate seats for drivers and passengers. Many of these vehicles have rollbars and seatbelts. These vehicles are available as four-wheeled or six-wheeled models and have excellent traction for heavy work.

As with all other agricultural equipment, you will get the best results by using the most appropriate tools for the job. Consider carefully what you expect from a utility vehicle and make the safest choices possible.

Appendix – Resources and Contacts

- Safe Farms Manitoba, Manitoba Agriculture, Food and Rural Initiatives
- Manitoba Labour and Immigration has good information on overall farm safety as well as information on ATV regulations and safety. Visit: manitoba.ca/agriculture/farmsafety; or call 945-2315 in Winnipeg; toll free 1-800-282-8069 ext. 2315; e-mail SafeFarms@gov.mb.ca.
- The Canada Safety Council (CSC) offers courses in ATV operation for adults and children. See the website at: www.safety-council.org/training/ATV/atv.html
- The ATV Safety Institute (ASI) is a manufacturers' organization that promotes the safe use of ATVs. The ASI produces videos and booklets on ATV use and the website features an interactive ATV safety exercise aimed at children. Visit: www.atvsafety.org/indexflash.html
- The Canadian Agricultural Safety Association (CASA) is a coalition of farm safety agencies from across Canada. It manages the Canadian Agricultural Safety Program and sponsors annual Canadian Farm Safety and Health conferences. Visit: www.casa-acsa.ca; or call 1-204-452-2272

First Aid Kits

Keep a Basic First Aid Kit on the ATV at all times. Keep it in a container that can readily be taken to the scene of an injury and that will keep items clean and dry.

It should contain:

1) General

- a recent edition of a first aid manual
- a pair of impervious disposable gloves
- a disposable resuscitation mask with a one-way valve
- a disposable cold compress
- 12 safety pins
- splinter forceps
- one pair of 12 centimetres bandage scissors
- 25 antiseptic swabs
- waterless hand cleaner
- waterproof waste bag

2) Dressings - each of the following items must be sterile and individually wrapped to maintain sterility:

- 16 surgical gauze pads (7.5 centimetres squares),
- 4 pads (7.5 centimetres X 10 centimetres, non-adhesive)
- 32 adhesive dressings (2.5 centimetres wide)
- 2 large pressure dressings

3) Bandages:

- 3 triangular bandages (1 metre each),
- 2 conforming bandages (10 centimetres each),
- 2 rolls of 2.5 centimetres adhesive tape,
- 1 roll of 7.5 centimetres elastic adhesive bandage
- 2 rolls of 7.5 centimetres tensor bandage

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